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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Sam-Chul Ha

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EXAMINER

CHOU, ALBERT T

ART UNIT

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2416

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/558,434	Applicant(s) HA ET AL.	
	Examiner ALBERT T. CHOU	Art Unit 2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 November 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/29/2005, 04/14/2006, 06/27/2008, 02/04/2009,</u> | 6) <input type="checkbox"/> Other: _____ |
| <u>04/15/2009, 06/10/2009</u> | |

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-49 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. While the claims recite a series of steps or acts to be performed, a statutory “process” under 35 U.S.C. 101 must (1) be tied to particular machine, or (2) transform underlying subject matter (such as an article or material) to a different state or thing. See page 10 of *In Re Bilski* 88 USPQ2d 1385. The instant claims are neither positively tied to a particular machine that accomplishes the claimed method steps nor transform underlying subject matter, and therefore do not qualify as a statutory process.

Claim 1 recites “*A home network system*”; however, in light of Applicants’ specification, claim 1 simply provides a conceptual framework of a home network which does not transform underlying subject matter (such as an article or material) to a different state or thing. In particular, claims 2-49 are directed to a communication protocol which is no more than a set of rules, conventions and data structure (involves no more than a manipulation of an abstract idea or data structure), and may be completely implemented by computer software. Therefore, claim 2-49 are non-statutory.

For example, *“the protocol... further comprises an application software for...”* in claim 2, *“the protocol further comprises a parameter management layer for ...”* in claim 6, or *“the interface between the physical and the data link layer comprises..”* in claim 7, or *“the interface between the data link layer and the network layer comprises...”* in claim 10, or *“the interface between network layer and the application layer comprising ...”* in claims 15, 22, 30 and 39, etc., is broad enough that the claim could be completely performed mentally, verbally or without a machine nor is any transformation apparent.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over “A New Control Protocol for Home Appliances-LnCP” by Lee et al., Industrial Electronics, 2001 Proceedings, ISIE 2001, IEEE International Symposium, Volume 1, 12-16 June 2001 Pages: 286 - 291 vol.1 (hereinafter "Lee"), in view of “Towards Dependable Home Networking: An Experience Report” by Wang et al., Proceedings International Conference on Dependable Systems and Network, 2000, DSN 200025, IEEE Computer Society, pages 43-48 (hereinafter “Wang”).

Regarding claim 1, Lee teaches a home network system **[Fig. 1; A Living Network system; sec. 2.1]**, comprising:

a network based on a predetermined protocol **[Fig. 1; A Living Network implementing Living Network Control Protocol LnCP; sec. 2.1]**; at least one electric device connected to the network **[Fig. 1; e.g. a refrigerator or an oven ; sec. 2.1]**; and

a network manager connected to the network **[Fig. 1; Network Manager; sec. 2.1]**, for controlling and monitoring the electric device **[Fig. 1; provide user interface to issue commands for controlling and monitoring the electric devices; sec. 2.1]**,

wherein the protocol **[based on the ISO seven layers network protocol model; sec., 2.2]** comprises an application layer for handling a message for controlling and/or monitoring the electric device **[Fig. 1; LnCP Application Layer is responsible for message generation/reception/execution; sec. 2.2]**, a networking function for network-connecting the electric device to the network manager **[Fig. 1; a network layer function (i.e. end-to-end packet delivery) is inherent in Lee in order to enable the network manager to communicate with the appliances (e.g. a user uses the network manager to issue commands to control/monitor the appliances0; sec. 2.1, 2.2 & 4.0 (Packet Structure)]**, a data link layer for accessing a shared transmission medium **[Fig. 1; LnCP Data Link Layer handles reception of packets over the attached medium, a networking bus, e.g. a power line, shared by all nodes; sec. 2.2]**, and a physical layer for providing a physical interface between the electric device and the network manager **[Fig. 1; LnCP Physical Layer provides**

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physical interfaces among all nodes, including the network manager, attached to the networking bus; sec. 2.1 & 2.2],

wherein the physical layer for providing an interface with a dependent transmission medium **[Fig. 1; e.g. a networking bus such as a power line (i.e. a dependent transmission medium); Sec. 2.1, 4 & 5.1]**, and the network function further comprises a home code control function for managing a home code for network security when accessing the dependent transmission medium **[Fig. 1; i.e. In LnCP the sender designate the recipient using Home Code HC and address. The HC is used for differentiating the house from neighbors when many house shares the same power line, namely, HC is used for the network security; sec. 4 (Packet structure), & 5.1].**

Lee does not expressly disclose the physical layer further comprising a special protocol for providing with an interface with a dependent transmission medium, or the LnCP defines/consists of a network layer and a home code control sub-layer for managing a home code for network security when accessing the dependent transmission medium.

Wang, in the similar field of endeavor, teaches a dependent home network **[Title & Abstract]**, wherein the physical layer comprising a special protocol for providing an interface with a dependent transmission medium **[Wang: Fig. 1; an X10 protocol to interface a dependent transmission such as a power line; P. 45, R. column, 3rd par. - P.46, R. column, 2nd par. & Sec. 5. 1st -3rd par.]**.

In addition to Wang's teaching, it would have been obvious to one person of ordinary skill in the art at the time of invention was made to recognize that in accordance with the OSI Reference Model, the network layer is responsible for providing the functional and procedural means of transferring variable length data sequences from a source to a destination host via one or more networks. The network layer uses a logical addressing scheme, and any host connected to a network is assigned with a logical address chosen by a network operator.

Accordingly, it is obvious to one person of ordinary skill in the art to recognize that the home code in Lee, which comprising the product code and the logical address (device address and area code), is indeed a logical address associates with a node connecting to the network as shown in Fig. 1 of Lee.

Since the OSI model is the well-known industry standard, it would have been obvious to one person of ordinary skill in the art to modify Lee's LnCP model by adding the X10 protocol in the physical layer, a network layer and a home code sub-layer so that the node-to-node packet exchanges and home-code processing, since these are network layer functions, may be handled by the network layer and the home code sub-layer via the dependable transmission medium, such as the power line, using X10 control protocol.

The motivation of adding the X10 protocol and the network layer, which further comprising the home code sub-layer, would be to enable Lee's LnCP to distinct the functions of the physical layer, the data link layer and the network layer (instead of

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throwing them together) so that the physical layer, the data link layer and the network functions may be clearly and easily implemented and processed hierarchically.

Regarding claims 2-49, Lee, in view of Wang, teaches a home networking system using a Living Network Control Protocol LnCP, based on OSI reference model and layer stricture, for monitoring, controlling and providing packet exchanges between nodes within the home networking system.

Claims 2-49, which depend from claim 1 directly or indirectly, are directed to a communication protocol which is no more than a set of rules, conventions and data structure.

Thus, it would have been obvious to one person of ordinary skill in the art to recognize that there is no technical difference between the limitations of claims 2-49 of the present application and the combining teachings of Lee and Wang, except claims 2-49 further involving a manipulation of an abstract idea or data structure. Thus, the limitations of claims 2-49 do not depart from the scope and spirit of the combining teachings of Lee and Wang.

Also see 35 USC 101 Rejection to claims 2-49 in Section 1 of present Office Action.

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3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert T. Chou whose telephone number is 571-272-6045. The examiner can normally be reached on 8:30 - 17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H. Pham, can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Albert T Chou/
Examiner, Art Unit 2416
June 20, 2009